

REMARKS

The specification has been amended to add section headings.

The Official Action objects to the form of claims 1, 5, 10, 13, and 16. These claims have been amended solely as to form. Reconsideration and withdrawal of the objection are respectfully requested.

Claims 17-19 were rejected as anticipated by HARRISON 6,301,572. These claims have been canceled and withdrawal of the rejection is respectfully requested.

Claims 1-16 were rejected as unpatentable over HARRISON in view of BECHHOEFER et al. 6,567,757.¹ Reconsideration and withdrawal of the rejection are respectfully requested.

Claim 1 is patentable over this combination because the combination does not disclose using a first rotary wing aircraft and a second reference aircraft of the same type as the first aircraft to evaluate defects in a rotor of the first aircraft, introducing defects into the rotor of the reference aircraft, determining a neural network as a function of vibrations in the reference aircraft caused by the introduction of defects into the reference aircraft, and detecting defects in first rotary wing aircraft by analyzing vibration with the neural network.

¹ The Official Action does not include claim 3 among the list of rejected claims, but discusses claim 3 in the subsequent explanation of the rejection. If claim 3 is allowable, an indication of allowability in a non-final action is respectfully requested.

HARRISON discloses a system for tracking long term performance of a vibrating body, such as a gas turbine. However, the reference does not disclose taking a second series of measurements on a first turbine after having taken a first series of measurements on a second reference turbine. According to HARRISON, "it would be desirable to characterize a particular turbine and then monitor the performance of that unit" (column 2, lines 31-33, emphasis added). Further, the monitoring system of HARRISON "is highly tuned to an individual turbine" (column 11, lines 22-25), and the "classification regions are bound directly to the turbine to which the system is attached (column 10, lines 63-65).

HARRISON also does not suggest introducing defects into a reference turbine and determining a neural network illustrating the relationship between the vibrations and the induced defects.

BECHHOEFER et al. disclose a system similar to the one discussed in the present application at pages 1-5. However, this reference does not make up for the shortcomings of HARRISON noted above. BECHHOEFER et al. do not use results of measurements on a second reference aircraft to minimize vibrations in a first rotary wing aircraft as claimed. The reference also does not introduce defects; the rotor blade adjustments of BECHHOEFER et al. are not defects.

Accordingly, the combination does not disclose all of the limitations claimed in claim 1 and thus claim 1 would not be obvious to one of skill in the art.

Claim 20 has been added and is allowable because the references do not disclose or suggest providing a second reference aircraft of a type corresponding to the first rotary wing aircraft, taking the claimed first series of measurements on the reference aircraft before and after introducing defects into the rotor of the reference aircraft, determining a neural network that illustrates relationships between the plural accelerations and the defects introduced in the rotor of the reference aircraft, and taking the claimed second series of measurements on the first rotary wing aircraft and using the second series of measurements and the neural network to detect defects in the rotor of the first rotary wing aircraft.

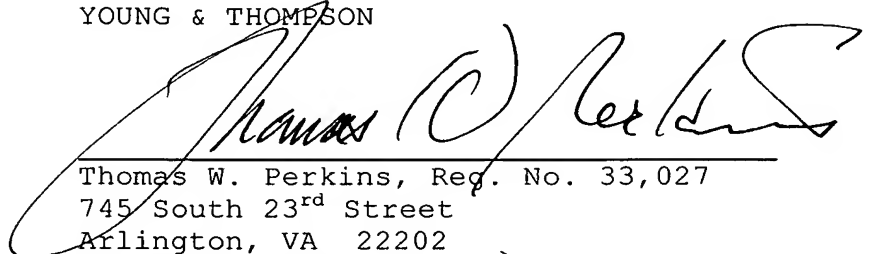
In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

overpayment to Deposit Account No. 25-0120 for any additional
fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON



Thomas W. Perkins, Reg. No. 33,027
745 South 23rd Street
Arlington, VA 22202
Telephone (703) 521-2297
Telefax (703) 685-0573
(703) 979-4709

TWP/lk